

Please cancel claims 11-14.

Please add the following new claims 15-22:

~~15.~~ A float equipment assembly for lowering a tubular string from a surface position into a wellbore and for cementing said tubular string in position, said assembly comprising:

an outer tubular affixed to said tubular string, said outer tubular having an open lower end which opens into said wellbore to permit fluid flow into or out of said open lower end during a two-way flow mode of operation of said float equipment;

a first flapper valve body mounted within said outer tubular, said first flapper valve body defining a first bore therethrough;

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a first flapper closure element pivotally mounted to said first flapper valve body for pivotal movement between an open position and a closed position, said first flapper closure element being selectively operable between said two-way flow mode and a one-way flow mode, in said two-way flow mode said first flapper closure element being secured in said open position to permit fluid flow through said first bore in a direction toward said surface position and also to permit fluid flow in a direction away from said surface position, in said one-way flow mode said first flapper closure element being pivotally moveable between said open position and said closed position responsively to fluid flow direction and being mounted to thereby prevent fluid flow through said first bore in said direction toward said surface position and to permit fluid flow in said direction away from said surface position;

a second flapper valve body mounted within said outer tubular, said second flapper valve body defining a second bore therethrough;

a second flapper closure element pivotally mounted to said second flapper valve body for

pivotal movement between an open position and a closed position, said second flapper closure element being selectively operable between said two-way flow mode and said one-way flow mode, in said two-way flow mode said second flapper closure element being secured in said open position to permit fluid flow through said second bore in said direction toward said surface position and also to permit fluid flow in said direction away from said surface position, in said one-way flow mode said second flapper closure element being pivotally moveable between said open position and said closed position responsively to fluid flow direction and being mounted to thereby prevent fluid flow through said second bore in said direction toward said surface position and to permit fluid flow in said direction away from said surface position; and

B1 an inner tubular having an inner tubular flow path therethrough for receiving fluid flow from said wellbore in said two-way flow mode when lowering said tubular string into said wellbore, said inner tubular being initially securable at a first axial position with respect to said outer tubular, in said first axial position said inner tubular being mounted to extend simultaneously through both said first bore and said second bore to thereby secure said first flapper closure element in said open position for operation in said two-way flow mode and to secure said second flapper closure element in said open position for operation in said two-way flow mode, said inner tubular being axially moveable from said first axial position away from said first flapper valve body and said second flapper valve body to thereby release said first flapper closure element for operation in said one-way flow mode and also to release said second flapper element for operation in said one-way flow mode.

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16. The apparatus of Claim 15 further comprising said outer tubular being rigidly secured with respect to said tubular string so as to remain in a fixed position with respect to said tubular

string during both said one-way flow mode and said two-way flow mode, said outer tubular being an outermost tubular along an axial length between said open lower end and said second flapper valve body.

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17. The apparatus of Claim 15, further comprising a shear element for securing said inner tubular in said first axial position, said inner tubular being mounted for unrestricted movement away from said first flapper valve body and said second flapper valve body to release said first flapper closure element for operation in said one-way flow mode and also to release said second flapper element for operation in said one-way flow mode after shearing of said shear element.

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18. Float equipment assembly for lowering a tubular string from a surface position into a wellbore and for cementing said tubular string in position, said assembly comprising:

- an outer tubular member forming a lowermost position of said tubular string, said outer tubular member having a lower end with one or more openings to provide fluid communication with said wellbore;
- an inner tubular member moveable between a first position and a second position with respect to said outer tubular member, said lower end of said outer tubular member permitting fluid flow to said inner tubular member during said lowering of said tubular string into said wellbore while said inner tubular member is in said first position, said inner tubular member defining a seat, said inner tubular member being moveable between said first position and said second position in response to receipt of a drop member into said seat; and
- a plurality of flapper valves mounted between said inner tubular member and said outer tubular member, said plurality of flapper valves being affixed in an open position when lowering

said tubular string into said wellbore, said plurality of flapper valves being operable for movement between an open position and a closed position after movement of said inner tubular member from said first position to said second position such that said plurality of flapper valves permit fluid flow in one direction after movement of said inner tubular member from said first position to said second position and block fluid flow in an opposite direction; and

a shear member that shears in response to said receipt of said drop member into said seat, said inner tubular member being mounted for unrestricted movement between said first position and said second position after said shear member is sheared.

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~~15~~ 15. The assembly of claim ~~14~~ 13, said outer tubular member being an outermost tubular along an axial length between said lower end and said plurality of flapper valves, said outer tubular member being rigidly affixed to said tubular string during movement of said inner tubular member with respect to said outer tubular member.

~~16~~ 16. Float collar/shoe equipment for use in lowering a tubular string into a wellbore and for cementing the tubular string in position, comprising:

an outer tubular member affixed to said tubular string;

an inner tubular member moveable between a first position and a second position with respect to said outer tubular member, said outer tubular member having initially a substantially unrestricted lower open end leading to said well bore to permit substantially unrestricted fluid flow from said lower open end through said inner tubular member during said lowering of said tubular string into said wellbore while said inner tubular member is in said first position; and

a plurality of one-way valves positioned between said inner tubular member and said

outer tubular member, said plurality of one-way valves having a plurality of closure elements and a plurality of valve seats, said inner tubular member being positioned in said first position such that said inner tubular member simultaneously extends through said plurality of one-way valves and maintains said plurality of closure elements in an open position such that fluid may flow through said plurality of one-way valves in two directions, said inner tubular member being moveable to said second position to thereby permit said closure elements to close such that said plurality of one-way valves then permit fluid flow in only one direction and block fluid flow in an opposite direction.

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21. The apparatus of Claim ¹⁶ 20 further comprising said outer tubular member being rigidly secured to said tubular string so as to remain remain in a fixed position with respect to said tubular string, said outer tubular member being an outermost tubular along an axial length between said lower open end and said plurality of one-way valves .

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22. The apparatus of Claim ¹⁶ 20 further comprising a shear element for securing said inner tubular member in said first position, said inner tubular member being mounted for unrestricted movement after shearing of said shear element to said second position to thereby permit said closure elements of said plurality of one-way valves to close such that said plurality of one-way valves then permit fluid flow in only one direction and block fluid flow in an opposite direction.

Please amend the following claims as indicated:

1. A well completion float shoe/collar tool comprising:

an outer tubular member and an inner tubular member, said outer tubular member having both upwardly facing and downwardly facing fluid jet openings and having an open lower end, said upwardly facing fluid jet openings being initially closed by said inner tubular member during casing string run in;

one or more flapper valves mounted between said inner tubular member and said outer tubular member;

said inner tubular member having a bore there through initially open to fluid flow and permitting fluid flow to said downwardly facing fluid jet openings and permitting fluid flow upwardly from said open end of said outer tubular through said inner tubular; and

means for causing longitudinal movement of said inner member with respect to said outer member, said movement causing said downwardly facing jets to close and said upwardly facing jets to open.

2. A well completion float shoe/collar tool for use in a wellbore comprising:

an inner tubular member and an outer tubular member, said outer tubular member having a tubular axis, said outer tubular member having both upwardly angled and downwardly [facing] angled fluid jet openings therein, said upwardly angled and said downwardly angled fluid jet openings each having a respective bore axis, each said respective bore axis being non-parallel with respect to said tubular axis;

a plurality of flapper valves positioned between said inner tubular member and said outer tubular member, said plurality of flapper valves having a plurality of closure elements and a plurality of valve seats, said inner tubular member being initially positioned such that said inner

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tubular member extends through said plurality of flapper valves and covers said plurality of flapper valve seats and maintains said plurality of closure elements in an open position such that fluid may flow through said plurality of flapper valves in two directions; and

means for selectively closing one or the other of said fluid jet openings in said outer tubular.

3. The tool of claim 2 wherein said means for selectively closing comprises means for causing relative motion of said inner tubular member with respect to said outer tubular member.

4. The tool of claim 3 wherein said relative motion comprises longitudinal relative motion of said inner tubular member moving with respect to said outer tubular member.

5. The tool of claim 4 wherein said longitudinal relative motion is caused by means of obturating an internal passage of said inner tubular member.

6. The tool of claim 5 wherein said obturating means includes a ball pumped down under fluid pressure from the surface of the earth to said tool.

7. The tool of claim 1 [and further including pressure pumping apparatus at the earth's surface generating pumping pressures strokes, and said tool also including said plurality of flapper valve means, activated upon said movement, to prevent fluid from re-entering said outer and inner tubular members between pumping pressure strokes] further comprising an outermost tubular mounted outside said outer tubular member and said inner tubular member.

8. The tool of claim [7] 2 wherein said [valve comprises one or more one way flow check valves] outer tubular member is an outermost tubular for said well completion float shoe collar tool such that no other tubular is mounted outside of said outer tubular member.
9. The tool of claim 8 [wherein said check valves comprise flapper type valves] further comprising a lowermost end of well completion float shoe/collar tool, said outer tubular being substantially rigid so as to remain in a fixed position with respect to said lowermost end while said inner tubular member is relatively moveable with respect to said lowermost end.
10. The tool of claim [9] 2 wherein said plurality of flapper valves are held in their open position [during casing run in] as said well completion float shoe/collar tool is lowered into said wellbore.